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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/641,570	08/18/2000	Christoph Ullman	A-7167	6764

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EXAMINER
NGUYEN, TUAN M

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 05/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/641,570	ULLMAN ET AL.	
	Examiner	Art Unit	
	Tuan M Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 42-82 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 42-82 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

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Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Response to Preliminary Amendment

1. Preliminary Amendment filed on 09/21/00 has been entered **and made of record as Paper No. 2.**

In preliminary Amendment, applicant cancels claims 1-41 in the original application, and replace with claims 42-82.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 42-43, 45-60, 62-70 and 72-82 are rejected under 35 U.S.C. 102(a) as being anticipated by Ullmann et al (US patent 6,157,452 B1).

With respect to claim 42, Ullmann discloses an optical arrangement for use in a laser diode arrangement comprising a diode laser arrangement (1), diode laser stack (2), a substrate (3), a diode laser bar (4), the emitter (5), the fast axis collimator (6), the cylinder lens (6'), the optical element (7), a focusing optic (8), a common focal spot (9), deformed imaging (10, 11), corrected imaging (10a, 11a, 10 b, 11b) and a gap (12), note col. 2 lines 37-55, see figs 1 and 2.

With respect to claim 43, Ullmann discloses the correction lens are formed by at least one lens element which is made as the fast axis collimator and the slow axis collimator, see fig 2.

With respect to claim 45, Ullmann discussed the correction optics has a plurality of lens elements which adjoin one another in the direction of the slow axis (x axis), note col. 3 lines 56-67 and col. 4 lines 1-3.

With respect to claim 46, Ullmann discussed about the semiconductor chip, direction the laser light and monolithically, note col. 2 lines 41-55.

With respect to claims 47 and 54, Ullmann discussed the lens element of the correction optics is assigned to an emitter element, also the correction optics comprises a plurality of collimator segments which follow one another in the slow axis, note col. 2 lines 56-67.

With respect to claims 48 and 60, Ullmann discussed the correction optics segments which follow one another in a direction of the slow axis (x axis), note col. 4 lines 4-13.

With respect to claim 49, Ullmann discussed about the laser diode arrangement (1), cylinder lens element (6', 6a', 6b') and macrooptics (7), note col. 4 lines 35-47.

With respect to claim 50, Ullmann discussed about the laser diode arrangement (1) and the correction optics, note col. 2 lines 56-67.

With respect to claims 51 and 52, Ullmann discussed about the correction optics collimates or shapes beams of the at least one row of emitter elements into beams which are parallel or roughly parallel to one another on the plane of the slow axis without overlapping one another, note col. 3 lines 14-36 .

With respect to claim 53, Ullmann discloses the laser diode arrangement (1), comprising at least one correction optics which acts as the slow axis collimator (7), the fast axis collimator (6), the emitter elements (5), the microcylinder lens (6'), see figs 1 and 2.

With respect to claim 55, Ullmann discussed about the collimator segments and row of emitter elements, note col. 1 lines 56-60.

With respect to claim 56, Ullmann discloses the laser diode arrangement and at least one slow axis collimator, the fast axis collimator, the correction optics and the beams , see fig 1, 2.

With respect to claims 57 and 58, Ullmann discussed about the slow axis collimator, cylinder lens elements, oriented with their axis, and focusing optics, note col. 3 lines 6-13, see fig 1.

With respect to claim 59, Ullmann discussed about the correction optics has from two to five segments, note col. 4 lines 14-27.

With respect to claim 62, Ullmann discussed about the monolithic slow axis collimator and cylinder lens, note col. 2 lines 37-55.

With respect to claim 63, Ullmann discussed about the fast axis collimator are cylinder lenses or act as cylinder lenses, note col. 3 lines 56-67.

With respect to claim 64, Ullmann discussed about the several rows of the emitters in a second coordinate direction (x axis) following one another in a diode laser stack , note col. 5 lines 15-18.

With respect to claim 65, Ullmann discussed about the several rows of emitters and the active layer, note col. 5 lines 15-19 and col. 1 lines 15-18.

With respect to claim 66, Ullmann discussed about the several rows of emitters, note col. 5 line 15-19 . Ullmann also discussed about the slow axis collimator, note col. 3 lines 6-13.

With respect to claim 67, Ullmann discussed about the several rows of emitter elements, note col. 5 lines 15-19 and the beams of the emitter of each bar, the diode laser bar (4), the fast axis collimator, note col. 1 line s 39-52.

With respect to claim 68, Ullmann discussed the laser diode arrangement (1) comprising several rows of the emitter elements, the diode laser stack, a fast axis collimator, note col. 5 lines 16-19.

With respect to claim 69, Ullmann discussed about at least one row of emitter elements and segmented fast axis collimator, note col.1 lines 56-60.

With respect to claim 70, Ullmann discussed about the emitter elements and correction optics, note col. 2 lines 56-67.

With respect to claim 72, Ullmann discussed about the rows of emitter elements in at least two stacks, note col. 1 lines 32-38.

With respect to claim 73, Ullmann disclosed the laser diode arrangement (1), the diode laser stack (2), of the slow axis (x axis), see fig 1.

With respect to claim 74, Ullmann discussed about the rows of emitter elements of at least two stacks are offset in a direction of the fast axis (y axis), note col. 1 lines 32-38.

With respect to claim 75, Ullmann discloses laser diode arrangement (1), the stack (2), diode laser bar (4), emitter elements (5), note col. 1 lines 66-67 ,and col. 2 lines 1-7, see fig 1.

With respect to claim 76, Ullmann discloses a focusing optics (8) which are common to the beams of all emitter elements, see fig 1.

With respect to claim 77, Ullmann discloses a row of emitter elements is formed by a diode laser bar (4), see fig 1.

With respect to claim 78, Ullmann discussed the diode laser bar is a semiconductor laser chip with several emitters, note col. 5 lines 12-14.

With respect to claim 79, Ullmann discussed about the emitter elements each comprise at least one emitter which radiates laser light, note col. 1 lines 19-31.

With respect to claim 80, Ullmann discussed about the distance from one another which is smaller than mutual distance of the emitter elements in each row, note col. 3 lines 1-5.

With respect to claim 81, Ullmann discloses the laser diode arrangement (1), the emitter elements (5), the diode laser bar (4), the collimator (6a), the cylinder lenses (6a'), the gap (12), note col. 4 lines 4-13, see figs 1 and 8.

With respect to claim 82, Ullmann discussed about the row of emitter elements, the active layer, the common plane, the perpendicular, note col. 4 lines 50-59.

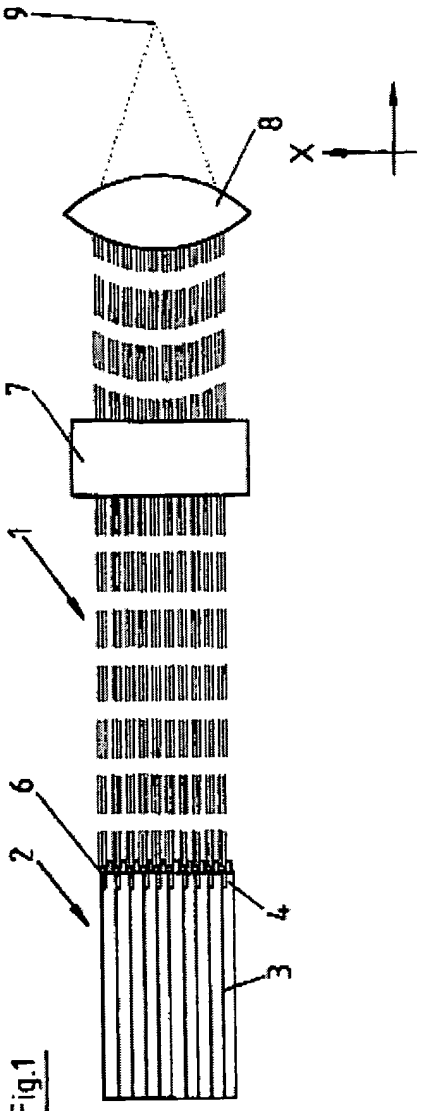

Fig.1

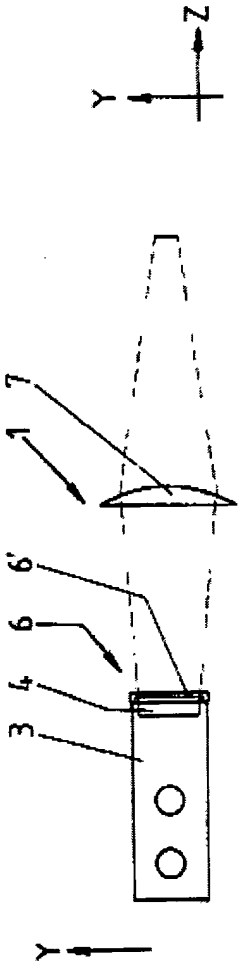

Fig.2

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 61 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ullmann (US Patent 6,175,425 B1).

With respect to claim 61, Ullmann has been discuses above except for the plane E which is defined by the fast axis (y axis) and the slow axis (x axis) and is located in a beam path where edge beams of the beams diverging in the slow axis (x axis) intersect with their edge beams. Since Ullmann discussed a laser beam which both in the fast axis, i.e. in the X-axis or in the X-Z plane, and also in the slow axis, i.e. in the Y axis and in the Y-Z plane, note col. 2 lines 56-59. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the plane E which is defined by the fast axis (y axis) and the slow axis (x axis) and is located in a beam path where edge beams of the beams diverging in the slow axis (x axis) intersect with their edge beams, since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

With respect to claim 71, Ullmann has been discuses all above except for the row of emitter elements (4) there is a separate slow axis collimator (6). Since Ullmann discussed each

row of emitter elements (4) there is a separate fast axis collimator (6), note col. 2 lines 56-67. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide each row of emitter elements (4) there is a separate fast axis collimator (6), since it has been held that discovering an optimum of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ullmann (US Patent 6,175,425 B1) in view of Krause et al (US patent 6,331,692 B1)

With respect to claim 44, Ullmann discussed all about except for the laser diode arrangement , the entry side with a lens surface with acts as the fast axis collimator and the exit side with at least one lens surface which acts as the slow axis collimator. Whereas the patent to Krause et al disclose a diode laser, laser optics, device for laser treatment of a workpiece, process for a laser treatment of workpiece comprising laser beam (3), diode laser (4), diode laser arrangement (5), laser optics (6), laser chip (7), fast axis collimator (8), slow axis collimator (9), cylinder lens (10, 11), rotary module (32), rotary prism (33), beam entry surface (35), beam exit surface (36), note see reference list col. 7 and 8, see figs 15 and 16. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Ullmann with entry side surface and exit side surface as suggested or taught by Krause.

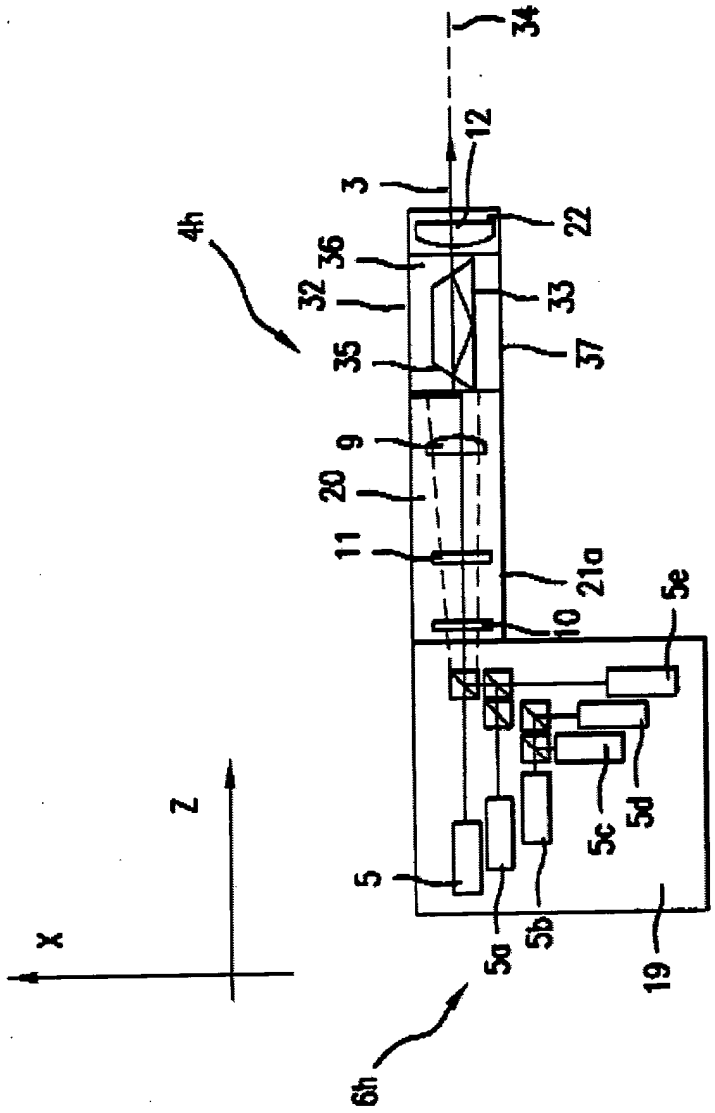

FIG. 16

Citation Of The Pertinent References

5. The prior art made of record and not relied upon us considered pertinent to applicant's disclose.

The patent to Wang et al (US patent US 2002/0025096 A1) discloses an optical coupling system comprising LDA emitter (EM), laser beam (BM), the fast axis collimator (FAC), distance of the objective (SAC), SEE FIGS (3A-3E).

The patent to Ito et al (US patent 6,154,278) discloses an optical encoder for optically measuring displacement of moving body comprising light source (301), rotary plate (302), fixed plate (303), grating (308), photosensor (309), see fig 1.

The patent to Moulin (US patent 6,137,631) disclosed an illumination system and method for spatial modulators comprising laser diode (1), cylindrical lens (2), see fig 3 and 3a.

The patent to Krause et al (US patent 5,986,794) disclose a laser optics and diode laser comprising laser diode arrangement (20, substrate (3), laser component (4), diode laser (1), see figs 1 and 2.

Communication Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247. The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-5511 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Paul Ip
SPE
Art unit 2828

TMN
May 12, 2002